

120 and into the MUT substrate 120. During receive operation, the flexible membrane 118 is electrically biased using electrical stimulus applied through the conductors 112 and 116. When electrically biased, the flexible membrane 118 produces a change in voltage that generates an electrical signal in response to acoustic energy received by the MUT element 110.

Please amend the paragraph beginning at page 5, line 6 of applicants Specification to read as follows:

A number of different methodologies can be used to join the MUT substrate 120 to the IC 140, many of which are disclosed in commonly owned assigned U. S. Patent Application entitled "System For Attaching an Acoustic Element to an Integrated Circuit," filed on even date herewith, and assigned Serial No. 09/919,470 [XXXXX, Attorney Docket No. 10004001)].

IN THE CLAIMS

Please amend the claims as follows. Also, please cancel Claims 4-9 and 13-17 without prejudice or disclaimer of the subject matter.

1. (Amended) An ultrasonic transducer, comprising:

a plurality of micro-machined ultrasonic transducer (MUT) elements formed on a first substrate, the first substrate including a first surface and a second surface; and

a plurality of vias associated with each MUT element and extending entirely through the first substrate, where the vias reduce the propagation of acoustic energy traveling laterally in the first substrate.

2. (Unchanged)

3. (Unchanged)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Amended) A method of reducing the lateral propagation of acoustic energy in an ultrasonic transducer, the method comprising the steps of:

forming a plurality of micro-machined ultrasonic transducer (MUT) elements on a first substrate, the first substrate including a first surface and a second surface; and

forming a plurality of vias proximate to each MUT element such that the vias extend entirely through the first substrate in order to reduce the propagation of acoustic energy traveling laterally in the first substrate.

11. (Amended) The method of claim 10, wherein the step of forming a plurality of vias includes [further comprising the step of] etching the vias into the first substrate.

12. (Amended) The method of claim 10 [11], wherein the step of forming a plurality of vias includes [further comprising the step of] etching the vias into the first surface of the first substrate and the second surface of the first substrate.

13. (Cancelled)

14. (Cancelled)

16. (Cancelled)


17. (Cancelled)

REMARKS

Entry of the present preliminary amendment is respectfully requested.

Please charge any fee deficiencies and credit any overpayments to Deposit Account No. 14-1270.

Respectfully submitted,



By _____
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